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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,778	03/23/2007	Justas Barauskas	613-109	1581

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EXAMINER	
AHMED, HASAN SYED	

ART UNIT	PAPER NUMBER
1615	

MAIL DATE	DELIVERY MODE
03/18/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,778	BARAUSKAS ET AL.	
	Examiner	Art Unit	
	HASAN AHMED	1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 December 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Receipt is acknowledged of applicants' amendment and remarks, filed on 6 December 2010.

* * * * *

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, in the latest amendment, the “50” in line 3 of claim 16 has been deleted without being replaced by another number. In order to expedite prosecution, examiner assumes that "60" was intended to replace "50", consistent with amendments to claims 14 and 15, as well as the remarks. Clarification is required.

* * * * *

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 14 and 17-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,120,794 ("Liu") in view of U.S. 2001/0031740 ("Unger"), further in view of U.S. Patent No. 5,531,925 ("Landh").

Instant claim 14 recites a particulate composition comprising: a) at least 60% of dioleoyl phosphatidyl ethanolamine (DOPE); and b) 1 to 40% of Polysorbate 80, wherein all parts are by weight relative to the sum of the weights of a+b and wherein the composition comprises non-lamellar particles or forms non-lamellar particles when contacted with an aqueous fluid.

Liu teaches an emulsion and micellar formulation useful for delivering biologically active substances to cells which is compatible with blood and stable in storage (see col. 1, lines 47-51).

Regarding claim 14, Liu teaches formulations wherein the TWEEN 80:DOPE ratio is 1:2 (see Table 3, formulation # 28 and 34; Table 4, formulation #40 and 42). Regarding claim 17, the disclosed formulation may comprise an active agent (see, e.g., col. 9, line 14). Regarding claim 23, Liu teaches that the disclosed formulation is stable in storage (see, e.g., col. 1, line 51). Regarding claims 22 and 24, Liu teaches an aerosol formulation (see col. 11, line 32), which comprises dry powder in a colloidal state. Regarding claim 25, Liu teaches various pharmaceutical formulations (see col. 11, lines 24-37). Regarding claim 26, Liu teaches a carrier (see, e.g., col. 1, line 53). Regarding claim 27, Liu discloses examples wherein the TWEEN 80:DOPE ratio is 1:2 (see Table 3, formulation # 28 and 34; Table 4, formulation #40 and 42).

Regarding claim 21, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) *See* MPEP 2144.05. With respect to claim 21, Liu discloses a particle size has high as 4 micrometers (see col. 10, line 49).

Regarding claim 23, as currently claimed, applicants' composition contains the same components in the same configuration as the prior art. Properties are the same when the structure and composition are the same. *In re Fitzgerald*, 205 USPQ 594.

Liu explains that the disclosed invention is beneficial in that it forms stable complexes with biologically active substances, thus facilitating the delivery of said substances to cells.

Liu differs from the instant application in that it does not explicitly disclose non-lamellar particles.

Unger teaches a method for delivering a compound into a cell comprising a compound, an organic halide, and a carrier (see, e.g., abstract). The carrier may comprise cationic lipid, such as DOPE (see paragraphs [0063], [0072], and claim 38), a solubilizing agent, such as polysorbate 80 (see paragraphs [0074] and [0091]) and take the form of a micelle in a hexagonal (i.e. non-lamellar) configuration (see paragraph [0055]).

Landh teaches non-lamellar, colloidal particles (see, e.g., abstract). Landh teaches generally that phosphatidylethanolamine and ester derivatives thereof are

among the substances that can be used for the introduction of particular surface phases (see col. 11, lines 9-13) and that polysorbates may be used as fragmentation agents (see col. 16, line 30) in the production of the disclosed non-lamellar, colloidal particles.

With the teachings of Unger and Landh, a person of ordinary skill in the art would understand that the micelles disclosed by Liu which comprise DOPE and polysorbate 80 may be in a non-lamellar configuration.

Regarding claims 18 and 19, Unger teaches a carrier:compound ratio of 6:1 (see paragraph [0094]). Regarding claim 20, Unger teaches routes of administration such as injection and oral, wherein the aqueous fluid would inherently be a body fluid (see paragraph [0096]).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to disclose a non-lamellar particulate composition comprising at least 60% DOPE and 1 to 40% polysorbate 80, as taught by Liu in view of Unger, further in view of Landh. One of ordinary skill in the art at the time the invention was made would have been motivated to make such a composition because it is useful in that it forms stable complexes with biologically active substances, thus facilitating the delivery of said substances to cells, as explained by Liu (see above).

*

2. Claims 15, 16, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,120,794 (“Liu”) in view of U.S. Patent No. 5,531,925 (“Landh”).

Liu is discussed above. Liu teaches formulations comprising a TWEEN 80:DOPE ratio of 1:1 (see Table 2, formulation #17) and 1:2 (see Table 3, formulation # 28 and 34; Table 4, formulation #40 and 42). However, Liu does not disclose any embodiments or examples wherein the sole components of a composition are DOPE, polysorbate 80, and optionally, a solvent, as required by claims 15, 16, 28, and 29.

However, Landh teaches generally that phosphatidylethanolamine and ester derivatives thereof are among the substances that can be used for the introduction of particular surface phases (see col. 11, lines 9-13) and that polysorbates may be used as fragmentation agents (see col. 16, line 30) in the production of non-lamellar, colloidal particles. As such, it would be obvious to a person of ordinary skill in the art to combine the formulations disclosed by Liu with the general teaching by Landh to obtain a composition comprising only at least 60% DOPE, 1 to 40% polysorbate 80, and an optional solvent. One of ordinary skill in the art at the time the invention was made would have been motivated to make such a composition because it is useful in that it forms stable complexes with biologically active substances, thus facilitating the delivery of said substances to cells, as explained by Liu (see above).

* * * * *

Response to Arguments

Applicants' arguments filed on 6 December 2010 have been fully considered but they are not persuasive.

1. Applicants argue that no non-lamellar structure can form within a micelle because there are only "tail" groups in this region. See remarks, page 6.

The instant specification states, “[a]s use [sic] herein, the term "non-lamellar" is used to indicate a cubic, or hexagonal, or L_3 phase or any combination thereof, as opposed to lamellar structures as found in lamellar phase or liposomes.” See page 6, sixth full-paragraph. According to Unger, “”[m]icelle” refers to colloidal entities formulated from lipids. In certain preferred embodiments, the micelles comprise a monolayer or hexagonal H2 phase configuration.” See [0055]. Thus, Unger teaches that individual micelles may comprise a hexagonal configuration, which according to the instant specification is non-lamellar.

2. Applicants argue that the structure disclosed by Unger is not of non-lamellar particles but of a non-lamellar bulk phase formed from an arrangement of particles. See remarks, paragraph bridging pages 6 and 7.

As indicated above, Unger teaches that individual micelles may comprise a hexagonal configuration, which according to the instant specification is non-lamellar. Applicants do not cite what portion of the Unger reference explains that the disclosed structure is a non-lamellar bulk phase formed from an arrangement of particles; nor do applicants explain how such a conclusion was derived from the Unger disclosure. The arguments of counsel cannot take the place of evidence in the record. In re Schulze,346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997). See MPEP § 2145.

3. Applicants argue that the teaching of Landh is not concerned with particles of DOPE and P80 and thus does not appear to add anything of relevance to the above teachings. See remarks, page 7.

As explained in the substantive rejection, Landh teaches non-lamellar, colloidal particles (see, e.g., abstract). Landh teaches generally that phosphatidylethanolamine and ester derivatives thereof are among the substances that can be used for the introduction of particular surface phases (see col. 11, lines 9-13) and that polysorbates may be used as fragmentation agents (see col. 16, line 30) in the production of the disclosed non-lamellar, colloidal particles. Since DOPE is a phosphatidylethanolamine and P80 is a polysorbate, a person of ordinary skill in the art would expect similar properties when DOPE and P80 are combined, as in, for example, the Liu and Unger references.

* * * * *

Conclusion

Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HASAN AHMED whose telephone number is (571)272-4792. The examiner can normally be reached on 9am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert A. Wax can be reached on (571)272-0623. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. S. A./
Examiner, Art Unit 1615

/Humera N. Sheikh/
Primary Examiner, Art Unit 1615